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ABSTRACT

The paper reports on a research study investigating the attitudinal and content retention effects of a proposed values/moral education model. The research focuses on four components: 1) appropriate research designs consistent with the model used, 2) appropriate, reliable, and valid posttest attitude tests consistent with the expressed goals and aims of the model used, 3) appropriate statistical analysis linked to the design and data being used, and 4) appropriate claims made for the materials and model used based upon the data reported. Studies in the area of values/moral education have come under increasing criticism because of a number of problems with the research design, treatments, instrumentation, and statistical analyses. This study sought to obtain and examine content and attitude product variables related to the expected outcomes of the use of values dilemma activities based upon the Casteel-Stahl model. Eighteen 11th grade American History classes were selected and randomly assigned to experimental and control groups following the Groups-Within-Treatments Design. Experimental students used six values dilemmas based upon the model. Findings showed experimental students scored significantly higher on posttest retention of subject matter content and also showed significantly higher attitudes as measured by attitude instrument developed to test the effects of this particular model of values/moral education. The conclusion is that the Casteel-Stahl model is a viable model for developing values dilemmas for subject matter content classrooms and is capable of effecting a positive ways content retention and attitudes. (Author/CK)

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ABSTRACT

Studies in the area of values/moral education have come under increasing criticism because of a number of problems with the research design, treatments, instrumentation, and statistical analyses. The study conducted and reported here sought to reduce the problems pointed out above. Eighteen intact 11th Grade American History classes were selected and randomly assigned to the Experimental and Control groups following the Groups-Within-Treatments Design (Lindquist, 1953). Experimental students used six values dilemmas based upon the Casteel-Stahl model of values education. Experimental students scored significantly higher on posttest retention of subject matter content and also showed significantly higher (i.e., more positive) attitudes as measured by an attitude instrument developed to test the effects of this particular model of values/moral education. These results reveal the Casteel-Stahl model is a viable model for developing values dilemmas for subject matter content classrooms and is capable of effecting in positive ways content retention and attitudes.

Validating A Values/Moral Education Model Within Content-Centered Classroom Settings

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PERSPECTIVE

Recent reviews of the experimental research on the Simon-Raths and the Kohlberg approaches to values/moral education have not supported the authors of these models nor the research studies conducted to verify the validity of the outcome claims of these theorists and their respective approaches (Stewart,1975; Lockwood, 1975, 1978). These reviewers questioned the reported outcomes of these approaches, especially of the Simon-Raths model, on the grounds of weak treatment effects, poor designs, inappropriate statistical analysis, and/or inappropriate posttest measures (i.e., inappropriate because they were not consistent with clearly expressed outcome behaviors as cited by the model's authors). Like Superka (1974), the above critics argued that there needed to be a great deal of research in this area before any model can be credited with achieving congruency with producing outcomes consistent with the stated goals of the values/moral education movement.

In addition, these critics suggest that adequate research studies containing the following components still need to be conducted. These components are:

a) appropriate research designs consistent with the model used,
b) appropriate, reliable, and valid posttest attitude tests consistent with the expressed goals and aims of the model used,
c) appropriate statistical analysis linked to the design and data being used,
d) appropriate claims made for the materials and model used based upon the data reported.

These critics, especially Lockwood (1978), agree that most of the reported claims and benefits derived from values clarification programs and curricular efforts have not been supported by empirical research data. The research study reported below sought to incorporate these needed components in an effort to investigate the effects of the values/moral education model proposed by Casteel and Stahl (1975).

THE CASTEEL-STAHL MODEL OF COGNITIVE BASED VALUES EDUCATION

According to the "verbal evidence" or "cognitive" approach to values/moral education outlined by Casteel and Stahl (1975), individuals clarify their values and moral beliefs, make decisions and judgments, and comprehend and apply data by thinking about and considering information, problems, situations, and dilemmas in certain specific ways. To

these authors, values/moral thinking and subsequent learning involve specific kinds of mental processing which individuals use as they identify, comprehend, make decisions about, test, and use values and moral reasons concerning a given context and based upon the information they have available to them. Since this mental informational processing is an internal event, it can take place entirely within the minds of the individual students without ever becoming public. However, classroom teachers should not take for granted that this internal processing is actually taking place. Teachers can have information which they can hear, see, or observe which will let them know (by inference) that these values/moral thinking processes are indeed taking place in the minds of their students.

One convenient way to get observable evidence as to whether the appropriate internal processes are taking place is to use activities which require students to "talk through" their values/moral-related thinking and decision-making with others. As teachers hear statements which resemble the appropriate internal processes, they can reasonably infer that these valuing processes are in fact taking place. From an instructional standpoint and since they are all cognitively based, the clarification of values, values analysis, and moral reasoning can be verified as occurring only when the teacher has "verbal evidence" (in the form of oral or written statements made by students) that the internal mental processes associated with comprehension, valuing, decision-making, and reasoning have just taken or are taking place.

The Instructional Phases of the Model

According to Casteel and Stahl, four major types or phases of thinking must take place during values/moral classroom instruction.[1] These four are: Conceptual, Relational, Valuation and Reflective. Conceptual thinking involves student understanding and comprehension of available and relevant data, the situation, terminology, interpretations, comparisons, and relationships within and among the content being studied. Relational thinking focuses on the students' realization of the connection between what the present content, situation, and values/moral issues are and the focus of the lesson or some related content, problem, or values/moral issue which have already been or is presently being studied. Students demonstrate Valuation processing when they use statements which identify alternatives, consequences, criteria, and reasons as they attempt to reach a decision.

These first three "phases" were not developed within a vacuum. Instead, each separate phase represents a synopsis (as well as parallels

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[1] These phases were expanded and redefined somewhat by Stahl (1978, 1979b).

many) of the attributes included in a number of seemingly diverse approaches to content/process-oriented instruction such as "decision-making" (Engle, 1960), "effective choosing" (Cherryholmes, 1971), "critical thinking" (Ennis, 1962), "reflective thinking" (Hunt and Metcalf, 1968; Massialas and Cox, 1966), and "values analysis" (Coombs and Meux, 1971; Fraenkel, 1977). In addition, all of these models and approaches, and those suggested by Kohlberg (1975), Raths, Harmin, and Simon (1966, 1978), and Casteel and Stahl (1975), are ultimately tied to the philosophical position of Dewey (1933, 1939) and the work of Raup, Axtelle, Benne, and Smith (1950).[2]

All of these models and approaches have stressed to varying degrees the importance of:

a) understanding factual information with an emphasis on the objective examination of data, the situation, a problem, events, etc. (Note that the Conceptual phase focuses on the comprehension of available and relevant data and the situational context, the definition of terminology for semantical clarity, the objective interpretation of data, and so forth--all characteristics of information processing which emphasize understanding).

b) understanding the "relevancy" (i.e., relatedness or correctedness) among and between different pieces of data, situations, contexts, values/moral issues and positions being studied and/or which may be or have been studied. This description of relevancy (and the emphasis placed on relational thinking in this model) is incongruence with aspects of the Associationist learning theory which stresses the importance of forming associations to increase learning as well as memory functioning. (Note that the Relational phase provides for the need to and concern for helping students determine relevant associations within the information available to be processed).

c) making decisions or judgments of one type or another within the context of more encompassing decision-making abilities which include the consideration of alternatives, the examination of consequences, the identification and awareness of the reasons or criteria for making decisions and values/moral judgments and choices. (Note that the description of the Valuation phase includes the provision for these separate decision-making steps in logical proximity to one another as they would

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[2]The bibliography of these are cited elsewhere (Stahl, 1979b).

tend to occur within dilemma-or problem-solving situations. The appropriateness of these separate components as well as support for the construct of these parts into a single interrelated "phase" has been provided by a panel of teacher eudcators (Casteel and Stahl, 1973)

As described above, these phases are not unique to any one model of instruction or curriculum development. Instead these phases provide a convenient framework for including the essentials of the many seemingly diverse approaches and models cited above. These phases provide a convenient framework for viewing values/moral thinking and learning as it can take place in the classroom. Finally, this three-phase framework may also be used to plan substantive and process-oriented non-values/moral related learning activities as well.

It would seem that teachers who identify as their goals the development of subject-matter understanding, decision-making skills, clarified values and value choices, and moral reasoning skills would want to use activities which stimulate students to "provide verbal evidence" that they are actually using Conceptual, Relational, and Valuation types of thinking.[3]

Activities Based Upon The Model

The model provides quidelines whereby teachers can create and write content-centered learning activities which are likely to achieve their desired cognitive and affective student outcomes. This approach allows teachers to plan and develop subject matter-related materials which are likely to enhance comprehension of content while simultaneously helping students to practice and acquire decision-making, valuing, and moral reasoning skills. Using this model, teachers can develop values dilemmas which include the content and the processes they want to teach. Teachers may also use these activities as a means of shifting from a single discipline to an interdisciplianry orientation in their subject matter presentations.[4]

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[3]The "Reflective Phase" of the model is explained elsewhere by Casteel and Stahl (1975) and since it is not relevant to this study will not be elaborated upon here.

[4]The term "values dilemmas" was developed by Stahl (1978) and replaced the name "value sheet" originally used to distinguish between "value sheet" activities based upon this model and those based upon the Raths, Simon, et al. approach.

The term "values dilemma" refers to an instructional activity whose focus, content, context, values/moral setting, and format combine to describe or produce a situation which requires students to respond using personal and social values (and where appropriate, moral reasons) as they form feasible and appropriate responses. Values dilemma activities do not require that the situation or information provided identify an obvious dilemma or a conflict which generates equally compelling alternatives. It is expected, however, that the activity will work to produce a situation whereby students find that they must deal with personal and social values in considering, weighing, forming, and living with their responses.

The Research Need

An experimental study designed to investigate the consequences of "values dilemmas" instructional activities based upon this model would shed some light on the impact of such materials on the content retention and attitudes orientation of students who use them within subject matter courses and classes they are taking. And, while no process data would be collected live in the classroom, differences in post-test scores would suggest expected in-class verbal behaviors were being produced and used by students as they interacted with the activities and their peers.

Hypotheses

The study sought to obtain and examine content and attitude product variables related to the expected outcomes of the use of values dilemma activities based upon the Casteel-Stahl model. More specifically, the hypotheses set for the study were of two types--each relating to the particular type of posttest measure used. In regards to the content test, the hypothesis posited predicted that "there would be a significant difference between the Experimental and Control groups in content retention as measured by the posttest content scores on a 32-item test."

Because multidimensional attitude tests are considered to contain a series of smaller undimensional subtests each independent of one another and since it is unclear as to how big a difference on a 7-interval Likert scale is practically significant when comparing attitude test results, several hypotheses were posited for the attitude test results. One series of hypotheses stated that "there would be a directional difference between the Experimental and Control classes with the Experimental group Mean score possessing more positive directional attitudes on each subset." While statistical procedures to calculate the level of the differences between the two group Means for each subset would be used, as stated by the hypotheses, it was only necessary for the Experimental group Mean to be higher (i.e. more positive) for the hypothesis to be satisfied. In addition, it was hypothesized that "there would be a significant pattern effect for the

entire series of the subset attitude scores as verified by the 'sign-test' procedure." An Alpha of .05 was established as the level for significance. The attitude test hypotheses were placed in directional rather than null from because it seemed likely that the use of one activity a week for one period for six weeks without any follow-up would produce some differences in attitudes in a positive direction and such a difference would be an important finding in this first empirical investigation of the Casteel-Stahl model.

DESIGN AND PROCEDURES

Design

The design utilized for the study fit what was experimentally feasible for the researcher given the restraints of doing research inside schools during their second semester of operation. It was unfeasible for school administrators and teachers to allow existing intact classes to be completely broken up so that individual students could be randomly selected and assigned to newly formed Experimental and Control groups for a long continuous period of time. Besides, such a massive re-arrangement would have produced "Hawthorne" and other disruptive effects which would have had all types of confounding effects on the obtained data and subsequent analysis and interpretation. Although using intact classes is frequently frowned upon by many researchers, the design used fit the population available at the time. The "intact class" design as proposed by Lindquist (1953) was adopted and followed in the conduct of the study.[5]

Subject

In the Lindquist "intact class" design, the experimental unit for data analyses become the existing class unit rather than the individual students who make up the separate classes. Valid analyses would require the use of class mean scores which would also help to offset using total scores when uneven number of students per class existed (Glass and Stanley, 1970). The classes or subjects were obtained from the Tempe, Arizona secondary school system. Permission was received from the School Board to contact principals in the district's four high schools in order to find volunteer teachers who would be willing to participate in the study. Eventually, 18 intact classes taught by six teachers were volunteered from this "experimentally accessible population" (Bracht and Glass, 1968). These 18 classes were then randomly assigned to respective Experimental and Control groups.

Again to avoid problems in later data interpretation, it was necessary to obtain volunteer teachers who were teaching the same subject matter and were in approximately the same place in their content instruction and textbook readings. For these reasons, volunteers were sought and obtained from the 11th grade American History teachers at the four schools. Several other teachers who originally

[5]The phrase "intact classes" will be used in reference to the "Groups-Within-Treatments" design for the sake of readability. Those less familiar with this design may refer to Lindquist (1953).

volunteered to participate were excluded due to the needs just mentioned. Hence all students and classes involved were taking the required 11th grade American History courses offered at their respective schools.

Procedures

After the teachers were identified, they were contacted to find out what subject matter content they would be covering in a given six weeks period. All teachers used the same textbook (A High School History of Modern America published by Laidlaw Brothers, 1977) and were within a chapter of one another at the start of the study. Because of where they would be, it was decided to develop eight activities of which the teachers were to use any six during the six weeks period of the study. The researcher then planned, developed, and wrote eight values dilemmas-each covering a topic or event in the text the teachers thought could be featured in these activities.

The classrooms then were randomly assigned to Experimental and Control groups. The Experimental teachers were given no special training in using the activities. They were asked to divide their classes into small groups of 4 to 6 and to allow the students to work through the activities with little teacher interference. A short five minute or so review discussion at the end of the period was suggested. In all other matters the Experimental teachers were to conduct their classes in their usual manner. Some teachers had both Experimental and Control classes. Students were not informed of their role in a study or of the later posttests they were to take over the content covered. [6]

Treatment

Once each week for six consecutive weeks, students with Experimental classes used "values dilemmas" developed from the Casteel-Stahl model of values education. The researcher, one of the co-authors of this model, developed small groups oriented activities stressing the Forced Choice, Rank Order, and Classification Formats of the "values dilemma" (Casteel and Stahl, 1975). Each activity included subject matter content related to particular events and topics about American History the teachers said they wanted stressed by these activities. A great deal of the specific content actually included was not found in the student's textbook with the basic flow of events as included in the text was maintained in the values dilemmas.

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[6]The research followed the guidelines for conducting research on human subjects as prescribed by ASU policies and those established and enforced by the Tempe High School District under whose auspices this study was conducted.

The Experimental teachers were given copies of dittoed values dilemmas for all members of their classes as well as a copy of some suggested ways they could use them in their courses. Except for the need to place students in small groups to work through the activities first as individuals and then to reach a group consensus, all other instructional variables were under the complete control of the teachers themselves. Follow-up questions were provided the teachers for possible use at the end of the class period. The activities were to be used only within one class period with no carry-over to the next day. In some cases, teachers allowed the groups to operate to the end of the class periods with no teacher-student large group discussion at all. All other instruction was, as much as was possible, to be conducted in the teachers' own usual manner. The teachers reported following these procedures as recommended.

One week following the use of the sixth values dilemma, all classes were given a content and attitudes test to obtain data relative to these product variables. As before, the teachers administered the tests as suggested by the researcher.

Instrumentation

A content test was developed to include the subject matter covered during the six weeks period of the study. The researcher included two completion and two multiple choice items for each of the topics stressed in the eight values dilemmas. Two of the four items covered content found only in the text while the other two stressed topics and content included in both the text and the activitity. A KR-20 Reliability Coefficient of .89 was obtained for all 389 students taking the test. An "Average Item Difficulty" coefficient of .46 and an "Average Item Discrimination" coefficient of .47 were obtained as well. The time needed to complete a 32-item content test would allow time in the same class period for students to complete a 60-item attitude test.

The Stahl Multi-dimensional Inventory of Values and Attitudes--SMIVA: Senior High Version (Stahl, 1979) was used to measure student attitudes and self reports regarding a number of areas the Casteel-Stahl model indicated would be affected by experiences interacting with their activities. The "affect" dimensions included the areas of: (a) Empathy, (b) Communications, (c) Decision-Making, (d) Problem-Solving, (e) Assenting-Dissenting, (f) Personal Consistency, (g) Self-Acceptance, (h) Openness to Content, (i) Participation, and (j) Open-mindedness. Earlier factor analyses produced some additional dimensions measured by the test which include: (a) Expression During Communication, (b) Listening During Communication, (c) Consideration of Consequences.

Two previous validity and internal consistency reliability studies were conducted with the appropriate cross-correlations and factor analysis procedures followed to investigate the item and subsets of the test. (A description of these efforts and their results are currently in process of being written for publication by Stahl). The factors identified via the analysis tended to verify the existing subsets of the test as originally generated from the stated objectives of the model. The 60-item 7-interval Likert-style SMIVA test was also edited for readability. A Cronbach Alpha of .74 was computed which suggests several independent dimensions (or subsets) do exist within the test as constructed.

Statistical Analysis

The use of intact classes as the experimental unit has produced a variety of opinions among researchers as to how the resulting data are to be analyzed (Lindquist, 1953; Engelhart, 1972; Campbell and Stanley, 1963; Winer, 1962). Data were analyzed using the "t-test" and ANOVA procedures. Finally, a 'sign test' was used to examine the pattern of responses which existed across all the various dimensions (subsets) of the SMIVA attitude test scores.

RESULTS

One week following the sixth values dilemma, students in all 18 classes were given the 32-item content and the 60-item attitude test to measure their information retention and attitudes.

In reference to the content test, the Experimental group had a Mean score of 17.48 (s.d. = 3.22) while the Control group Mean was 11.60 (s.d. = 2.81). Using the t-test, the difference was found to be significant at the .001 level for the obtained 3.89 t-Value and at the .001 level for the obtained 15.14 F-ratio. The scores on the 32-item test for the 9 Experimental group classes ranged from a low of 13.95 to a high of 22.23. The Control group classes ranged from 8.06 to 16.86.

Table 1 presents the Means, standard deviations, t-Values, and F-ratios for the 10 major and three minor subsets of the SMIVA instrument. As illustrated, the differences between the two group Means for nine of the 10 major subsets was found to be statistically significant ($p < .05$). The nine subsets where significant differences were found are Empathy, Communications, Decision-Making, Personal Consistency, Problem Solving, Openness to Content, Openness to Participation, Acceptance of Self, and Open-Mindedness. All three minor subset variables, Expression and Listening during Communication and Consideration of Consequence were found to be significant ($p < .05$).

Another method of investigating the effects of an experimental treatment is to examine the relationship of all 10 subset scores to one another at one time. This is especially the case whengroup Mean scores on each separate subset appears to possess more statistically significant rather than practically significant differences. Table 2 reveals the findings of the "pattern analysis" of all 10 major subsets--a procedure suggested by Isaacs and Michael (1971). The findings of this analytical procedure are significant. The probability that all 10 of the subset response Means of the Experimental group would consistently fall to one side of the response Means of the Control group (i.e., no cross-over pattern) is $p = .001$ (Siegel, 1956).

TABLE 1

Means, Standard Deviations, t- and F-Values for Experimental and Control Group Classes for the SMIVA Subset and Content Test Variables on First Posttest

	VARIABLES	EXPERIMENTAL MEAN	EXPERIMENTAL SD	CONTROL MEAN	CONTROL SD	t Value	F-Ratio
SMIVA SUBSET SCORES	Empathy	4.90	.28	4.56	.18	3.17**	10.05**
	Communications	5.18	.21	4.88	.21	3.02**	9.09**
	Decision-Making	5.26	.18	5.07	.21	2.14*	4.58*
	Problem-Solving	5.17	.21	4.95	.16	2.52*	6.35*
	Personal Consistency	4.58	.20	4.21	.13	4.76**	22.62**
	Assenting-Dissenting	5.38	.94	4.85	.21	1.65	2.72
	Openness to Content	5.20	.33	4.73	.37	2.84**	8.08*
	Openness to Participation	4.49	.40	4.11	.24	2.44*	5.98*
	Acceptance of Self	5.31	.27	4.95	.23	3.08**	9.50**
	Open-mindedness	4.78	.20	4.58	.14	2.41*	5.82*
CONTENT TEST SCORES	Expression during communication	5.09	.28	4.79	.20	2.60**	6.76*
	Listening during communications	5.27	.16	4.97	.26	2.91**	8.44*
	Consideration of consequences	5.01	.20	4.80	.21	2.20*	4.82*
	Recall (Completion)	7.31	1.96	4.20	1.66	3.64**	13.26**
	Recognition (multiple-choice)	10.17	1.54	7.41	1.42	3.96**	15.65**
	Total Test Score	17.48	3.42	11.60	2.98	3.89**	15.14**

*$p < .05$ (t-Value = 1.75; F-Ratio = 4.49)

**$p < .01$ (t-Value = 2.58; F-Ratio = 8.53)

N = 9 classes in each group

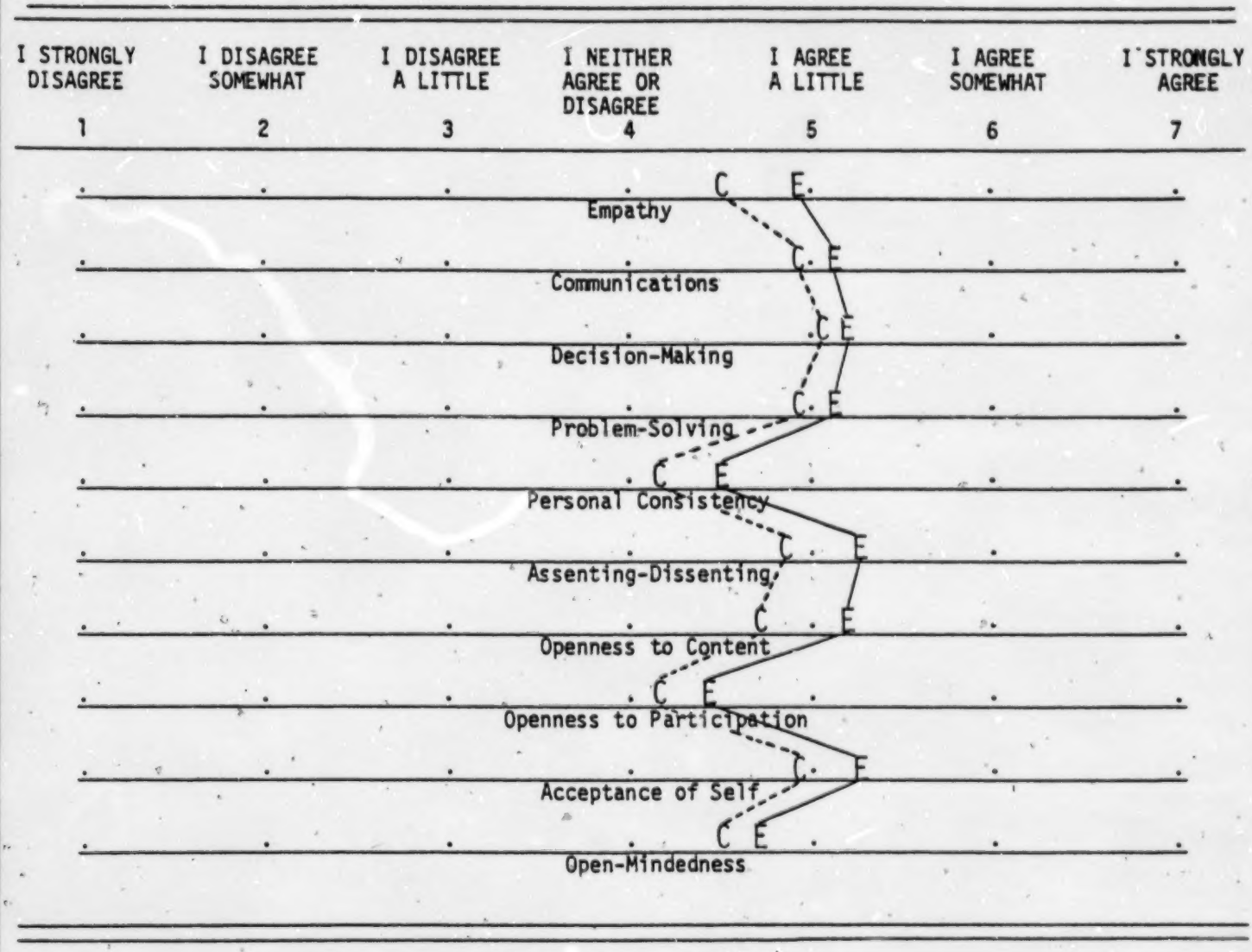

TABLE 2: The Contrast of Group Mean Scores for all Subsets to Illustrate the Pattern of the Distribution of the Means Across all Ten Major Variables of the SMIVA Instrument. (A procedure suggested by Isaac and Michael, 1971).

(The probability that all 10 of the subset response means of the Experimental group would consistently fall to one side of the response means of the Control group (i.e., no cross-over pattern) is $P = .001$ *(Siegel, 1956)).*

Thus, the results reveal that the Experimental group classes not only scored significantly higher on the content posttest, but they also possessed significantly more positive attitudes and self-reports. Finally, when looking at all 10 major subsets of SMIVA, the Experimental group did reveal a very significant "pattern effect" across all 10 variables in a more positive direction.

DISCUSSION AND CONCLUSIONS

The results suggest that the value dilemmas used during the course of this experimental study were effective in terms of the predicted outcomes posited by the Casteel-Stahl model of values education. Students who interacted with the activities did retain more content as well as develop more positive attitudes and self reports than those who did not engage in this interaction. Importantly, a replication of this study on the jr. high school level (Hunt, 1979, dissertation study in process) supports the findings listed above.[7]

One criticism of the data may concern the extent of the differences which were produced. There is no question that a difference of 5.88 on the 32-item content test is a major one. However, on a 7-interval attitude scale, how 'big' a difference is 1/5 of an interval between group Means? The research suggests that one should look at the overall outcomes of the study with special consideration of the over-all pattern effect. Table 2 clearly shows that for all variables examined, the Experimental group results were in a more favorable position than were those from the Control group. Considering teachers were given no special training, students were not able to continue their consideration or review over to later class periods, and only six activities were used over a 6-weeks period, this pattern effect is an important outcome to consider regardless of small interval differences (and regardless of statistical significances) which might exist for individual subsets.

These results suggest the Casteel-Stahl model of values education is a viable model to help students in various cognitive and affect dimensions of their lives and study. These results are especially significant in that the focus of this model is ultimately to have teachers and curriculum planners to design and develop their own values dilemmas to meet their own needs and situations. While the study dealt with social studies content, the model is applicable across disciplines and subject matter areas as well as across grade levels.

Training teachers to use these activities more appropriately as well as to be more effective follow-up discussion leaders may well lead to more powerful outcomes for students. Finally, the results suggest that teachers have at least one approach whereby they can attain both their cognitive and affective objectives simultaneously.

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[7]Blanche Sherman Hunt is in the process of completing her dissertation reporting on the jr. high school study using 18 intact classes. Scheduled completion date for her dissertation is December, 1979, from the Department of Secondary Education, Arizona State University.

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